



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,044	08/16/2006	Paul A. Stucky	60469-122PUS1; 000.05297-	9489
26096 7590 03/15/2010 CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE ROAD SUITE 350 BIRMINGHAM, MI 48009			EXAMINER CHAN, KAWING	
			ART UNIT 2837	PAPER NUMBER
			MAIL DATE 03/15/2010	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/598,044	Applicant(s) STUCKY ET AL.	
	Examiner Kawing Chan	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Amendments and Applicant Arguments submitted on 02/04/10 have been received and its contents have been carefully considered.

Claims 1-20 are pending for examination.

Response to Arguments

2. Applicant's arguments filed 02/04/10 have been fully considered but they are not persuasive.

In response to Applicant's argument on page 2 "...Robar reference requires using a constant current. The Examiner proposes to replace that with pulsed current from the Bernard, et al. reference. That change cannot be made because it would remove the constant current (i.e. intended feature) from the Robar reference...Intermittent pulses of current are essentially the opposite of a constant current. Therefore, the proposed combination cannot be made", the examiner disagrees with the argument. Bernard in Col 2 line 64 to Col 3 line 4 discloses the use of current pulses with same constant value of current each time to determine temperature of a wire by measuring its resistance. Although the current is in a pulse form, the current value is constant in each period between two pulses. Therefore, the current is a constant current value in a period of time. Since Robar only requires current value source, and Bernard provides a constant value in a period of time, the

Art Unit: 2837

proposed combination would not remove the intended feature (i.e. constant current) of Robar.

On page 2, Applicant further argues "...there would be no benefit or reason to incorporate the pulses from the Bernard, et al. reference into the Robar reference." According to KSR, where a claimed improvement on a device or apparatus is no more than "the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for improvement," the claim is unpatentable under 35 U.S.C. 103(a). *Ex Parte Smith*, 83 USPQ.2d 1509, 1518-19 (BPAI, 2007) (citing *KSR v. Teleflex*, 127 S.Ct. 1727, 1740, 82 USPQ2d 1385, 1396 (2007)).

In this case, Robar discloses a method of using constant current value to measure a resistance of a cable wire, and Bernard discloses a method of using current pulses with constant current value to measure a resistance of a wire. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have modified Robar with Bernard since both of them are using constant current to measure a resistance value of a wire, and it is well known to use current to measure resistance value.

Accordingly, since the applicant has submitted no persuasive evidence that the modification of the prior art (i.e. Robar) by using a known technique (i.e. Bernard) is uniquely challenging or difficult for one of ordinary skill in the art, the claim is unpatentable as obvious under 35 U.S.C. 103(a) because it is no more than the predictable use of prior art elements according to their

Art Unit: 2837

established functions resulting in the mere application of a known technique (i.e. using current pulses with constant value to measure resistance as disclosed by Bernard) to a piece of prior art (using constant current source to measure resistance of a wire as disclosed by Robar) ready for improvement (i.e. using current pulses would reduce power dissipation).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 6-8, 13, 14, 16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robar (WO 00/58706) in view of Bernard et al. (US 6,601,448 B1).

In Re claims 1 and 8, Robar discloses a device and a method of monitoring a condition of an elevator load bearing member (602; i.e. steel cord and multi-cord rope) that has a plurality of spaced, electrically conductive tension members (Page 8 lines 20-32 & Page 9 lines 24-31), comprising the steps of applying a selected electric signal (current) to at least one of the tension members (Page 8 line 20 to Page 9 line 31).

Robar fails to disclose the electric signal comprising a plurality of pluses and having a duty ratio that is less than 10%.

However, Bernard discloses electric signal (current) comprises a plurality of pulses and having a well determined duty ratio (well determined cyclic ratio) (Col 2 line 64 to Col 3 line 11). Since Bernard discloses a constant current can be used to generate current pulses, it would have been obvious to modify Robar with current pulses having constant current value. In addition, Bernard discloses the current pulses are generated in accordance to a well determined cyclic ratio (duty ratio). It would have been obvious to one having ordinary skill in the art at the time of the invention was made to have generated the current pulses with less than 10% duty ratio, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Thus, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have modified the teachings of Robar with the teachings of Bernard, since it is known in the art to utilize constant current pulses to measure resistance on a wire with the advantage of reducing power dissipation.

In Re claims 16 and 20, Robar discloses an elevator load bearing assembly (Figure 10), comprising:

- A plurality of electrically conductive tension members ((602; i.e. steel cord and multi-cord rope) (Page 8 lines 20-32 & Page 9 lines 24-31);
- A non conductive jacket (non-conductive insulator material: polyurethane) generally surrounding the tension members (Page 8 lines 20-26); and

- A controller (612) that selectively applies an electric signal (current) to at least one of the tension members (Page 8 line 20 to Page 9 line 31).

Robar fails to disclose the electric signal comprising a plurality of pluses and having a duty ratio that is less than 10%.

However, Bernard discloses electric signal (current) comprises a plurality of pluses and having a well determined duty ratio (well determined cyclic ratio) (Col 2 line 64 to Col 3 line 11). Since Bernard discloses a constant current can be used to generate current pulses, it would have been obvious to modify Robar with current pulses having constant current value. In addition, Bernard discloses the current pulses are generated in accordance to a well determined cyclic ratio (duty ratio). It would have been obvious to one having ordinary skill in the art at the time of the invention was made to have generated the current pulses with less than 10% duty ratio, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Thus, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have modified the teachings of Robar with the teachings of Bernard, since it is known in the art to utilize constant current pulses to measure resistance on a wire with the advantage of reducing power dissipation.

In Re claim 2, with reference to Figure 9, Robar discloses applying the signal (current) to one of the tension members (602) at a time.

In Re claims 6 and 13, Robar discloses the electric signal (current) is applied only to non-adjacent tension members (cords of a rope) at a time (Page 9 lines 24-28). Although Robar does not explicitly disclose the current signal is applied to non-adjacent tension members, it would have been obvious to one skilled in the art to choose any two or more of the cords inside the rope to compare the result (the selected cords could be not located next to each other). Since all the claimed elements were known in the prior art and one skilled in the art could have combined the claimed elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention was made.

In Re claims 7 and 14, Robar discloses determining a resistance of the tension members and a condition of the load bearing member based upon the applied signal (Page 8 line 20 to Page 9 line 31).

5. Claims 3, 9, 10, 15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robar (WO 00/58706) in view of Bernard et al. (US 6,601,448 B1) as applied to claims 1, 8 and 16 above, and further in view of Clarke et al. (US 2002/0194935 A1).

In Re claims 9 and 17, Robar and Bernard have been discussed above, but they fail to disclose a connector that establishes an electrically conductive connection between the controller and the tension members.

However, with reference to Figure 1, Clarke discloses a connector (201, 202, 12) that establishes an electrically conductive connection between the controller (V) and the tension members (10).

Thus, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have modified the teachings of Robar and Bernard with the teachings of Clarke, since it is known in the art to utilize jumpers to couple multiple tension members together so as to be able to detect the overall resistance of the tension members.

In Re claims 3, 10 and 18, Robar and Bernard have been discussed above, but they fail to disclose coupling at least two non-adjacent tension members in an electrically conductive manner.

However, with reference to Figures 1 and 2, Clarke discloses coupling at least two tension members (10) in an electrically conductive manner and applying the electric signal (current) to the coupled tension members (Abstract; Paragraphs [0015-0018, 0025, 0026]). With reference to Figure 1, six tension members (10) are coupled together in series by jumpers (12). The far left tension member is coupled to the second left tension member (adjacent) and to the rest of the tension members (non-adjacent). Based on the principle of broadest reasonable interpretation, “coupling at least two non-adjacent tension members” does not exclude the coupling of adjacent tension members. In addition, Clarke intends to connect all the tension members (10) in series by using jumpers (12), and rearranging the jumpers to couple tension members

Art Unit: 2837

with non-adjacent members only and connect all the tension members in a series connection would be within the skill in the art.

Thus, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have modified the teachings of Robar and Bernard with the teachings of Clarke, since it is known in the art to utilize jumpers to couple multiple tension members together so as to be able to detect the overall resistance of the tension members.

In Re claim 15, with reference to Figure 1, Clarke discloses the controller (V) applies the signal (current) to an entire plurality of tension members (10) simultaneously (since all the tension members are connected together in series by jumpers).

6. Claims 4, 5, 11, 12 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robar (WO 00/58706) in view of Bernard et al. (US 6,601,448 B1) as applied to claims 1, 8 and 16 above, and further in view of Brucken et al. (US 5,338,417).

In Re claims 4 and 11, Robar and Bernard have been discussed above, but they fail to disclose the tension member carrying the signal as a cathode relative to a hoistway where the belt assembly is used.

However, Brucken discloses the tension member (steel pipe encases a high tension power line) carrying the signal as a cathode (negative voltage) relative to ground (Col 2 lines 24-33).

Thus, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have modified the teachings of Robar and Bernard with the teachings of Brucken, since it is known in the art to utilize the technique of cathodic protection so as to be able to control the corrosion of a metal surface by making that surface as cathode.

In Re claims 5, 12 and 19, Brucken discloses controlling a potential of the electric signal (negative voltage) such that the potential is negative compared to the ground (Col 2 lines 24-33).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 2837

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kawing Chan whose telephone number is (571)270-3909. The examiner can normally be reached on Mon-Fri 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Benson can be reached on 571-272-2227. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. C./
Examiner, Art Unit 2837

/Walter Benson/
Supervisory Patent Examiner, Art Unit 2837